hourly eye readings. The report for 1901, which is the last to be received, gives the data in full, including records of evaporation, earth temperatures up to a depth of 1.15 meters, earthquakes as registered by the Milne seismograph, and solar radiation. This last element, whose determination is facilitated by the comparatively cloudless skies of Egypt, is measured by a Callendar sunshine receiver, which in November, 1901, replaced the ordinary bright and black bulb thermometers in use up to that time.

Observations at the Abbassia Observatory, 1901.

Months.	Temperature, in degrees C.					Relative humidity.			Mean cloudiness, tenths.	Wind.		
										Velocity in miles per hour.		Prevailing direction.
	Mean.	Max.	Min.	Mean max.	Mean min.	8 a.m.	8 p.m.	Min.		Mean.	Max.	
January	12.1	20.5	0.4	17.1	5.8	75	60	25	3.8	4.6	34	sw.
February	15.5	30.2	3.2	22.8	7.8	82	65	10	3.6	2.9	21	nne.
March	19.0	40.4	6.0	27.0	10.5	70	51	4	2.1	4.7	23	nw.
April	21.1	39.4	8.4	28.7	13.0	69	50	6	3.0	4.4	20	n.
May	24.1	43.0	11.2	31.7	15.5	54	39	7	3.1	5.4	21	ne.
June	27.9	42.2	15.4	35.9	19.4	58	43	3	1.8	4.2	18	n.
July	28.7	41.0	19.0	36.5	20.2	70	42	13	1.5	2.9	15	nw.
August	27.8	40.0	17.4	34.3	20.0	74	52	21	1.6	2.7	16	nw.
September	25.5	38.0	16.2	32.5	18.7	75	61	19	1.2	2.6	14	nw.
October	23.2	33.0	13.5	29.4	17.0	80	65	23	2.3	4.3	22	n.
November	18.9	33.6	8.7	24.5	12.5	74	62	15	3.2	2.6	19	s.
December	14.8	27.6	5.2	21.1	8.8	81	68	20	3.8	2.9	24	s.
Year	21.6	43.0	10.4	......	......	72	55	3	......	3.7	......	n.

The precipitation for the year amounted to 35.90 millimeters (1.41 inches) and fell on ten different days. There were six months in which no rain fell. During the 15-year period, 1884–1898, the highest temperature was 45.2° C. (113.4° F.), and the lowest —0.7° C. (30.7° F.). The report also contains observations from 12 second order stations, mean values at Wadi Halfa for the decennium ending in 1900, and gage readings from several stations on the Nile.

The Abbassia Observatory was about three miles from Cairo, with the open desert on one side and the highly cultivated Delta of the Nile on the other. The removal to Helwan was made partly for the sake of obtaining a purely desert exposure and partly to establish a magnetic observatory free from the influence of trolley lines and railroads.—*F. O. S.*

THE HEURISTIC METHOD.

In the article by Prof. J. M. Pernter, a translation of which is published in the MONTHLY WEATHER REVIEW for December, 1903, the author speaks of the heuristic method of discovering a correct method of forecasting. Wherever this word occurred we have translated it variously; namely, as the "discovery method," and again as the "inventive method." From the context, one may easily perceive that "heuristische" refers to that method in accordance with which one invents or devises a method or basis of forecasting, and then endeavors to find agreements between the predictions and the weather that will confirm the forecasts and thus establish the correctness of the principles on which these are based. The word heuristic has generally been used in English to indicate any method by which one discovers unknown laws, but in lieu of any better special word Pernter has adopted this particular application to a method that must be distinguished from the inductive or the deductive.

In the strict, logical, inductive method we first observe many phenomena, such as daily temperatures, pressures, and winds, and from these facts, by various processes of study, we are led to generalizations and hitherto unknown laws, such as the geographic distribution of the diurnal amplitude, the moment of maximum, etc.

In the strictly deductive method, we begin by accepting certain principles or laws, such as the law of inertia or the law of gravitation, or the laws of the conduction of heat; by reasoning upon these by strictly logical or mathematical methods we arrive at their necessary consequences, and thus learn to recognize and accept new laws or hitherto unknown phenomena.

All our progress in science must depend upon the proper application of these three methods of reasoning. Observation and experiment, maps and tables of figures are not the laws of nature, but result from those laws, and we can not pass from this crude data back to the general laws except by adhering to the most rigid logic. Mathematics and even the doctrine of chance are but forms of logic. We are all familiar with the legitimate syllogism, "All B is A; C is B: therefore, C is A." But how many are apt to be misled by the following syllogism: All B is A; C is A: therefore, C is B.—*C. A.*

THE GALVESTON HURRICANE AND OCEAN WAVE.

Mr. Adolphus Carper, Galveston, Tex., writes to the Chief of the Bureau that he is confirmed in his previous statement that the destructive high water at Galveston on September 8, 1902, must have been due to a combination of wind or hurricane wave, and tidal or oceanic wave. He says this view is not generally accepted in Galveston, but is confirmed by the fact that—

the hurricane came upon the city from the north, having traversed Texas, the ravages of which commenced in Bell County, 218 miles north of Galveston. The tidal wave came from the southwest, from the Gulf, sweeping over Galveston in the face of a hurricane calculated to have had a velocity of 120 miles per hour. It, the tidal wave, vanished as quickly as it came; the gale, still blowing, leaving behind a black ooze of a sickening, disgusting odor. About the end of September a sailing craft arrived in New York Harbor whose captain, in his sworn protest at the custom-house, reported having passed a locality in the Bay of Campeachy about the date of the Galveston disaster showing by its vast disturbed area that a submarine volcanic eruption must have taken place in that spot.

ARE THE MOVEMENTS OF THUNDERSTORMS DEFLECTED BY THE TIDE?

A letter from Dr. J. Russell Smith, of the University of Pennsylvania, states that unscientific observers believe that the thunderstorms passing near Cape May are deflected up or down the Delaware Bay by the tides, and asks if this is correct, and what is the explanation?

As this was a new idea in meteorology, a letter of inquiry was sent to our station agent at Cape May, Mr. George L. Lovett, who replied, inclosing a diagram showing the paths of storm movements across Delaware Bay, and stating that they are deflected by the tides and not by the winds. According to his diagram, an incoming flood tide generally enters the bay from the southeast and carries thunderstorms northward; an outflowing ebb tide, moving southward, carries thunderstorms southward; during slack water, storms move eastward straight across, irrespective of wind direction and velocity.

The Editor judges that possibly Mr. Lovett's letter expresses a general belief on the part of the inhabitants of Cape May and the adjoining country, but as there is no a priori reason to believe that tides can have any such influence, it seems important that the dates and observations should be put on record. In order to establish such a novel rule, it will not do to pick out a few favorable coincidences, but it is necessary to carefully plot the path of every thunderstorm for a year or more, and then correlate these paths with the tides and winds. Moreover, the temperature of the surface water must be observed, since it is quite plausible that, with an incoming tide and a southerly wind, the surface water on the east side of the bay would have a different temperature from that on the west side, so that the relative evaporation and moisture of the air may influence the development and path of a thunderstorm. The principal difficulty is the correct plotting of the paths of the storms. This can only be done by the cooperation of many